



December 8, 2009

Attn.: Lawrence J. Dusak  
Energy And Environment Cabinet  
Department For Environmental Protection  
Division Of Water  
200 Fair Oaks Lane  
Frankfort, Kentucky 40601

RE: Premier Elkhorn Coal Company  
Permit No. 867-0371 Am. #6 KPDES Permit Application  
Notice of Deficiency Response

Dear Mr. Dusak:

Please find attached the required information for the above referenced KPDES application. The proposed operation is located on the Jenkins West 7.5' Quadrangle near the communities of McRoberts and Fleming-Neon in Letcher County. The applicant is proposing to expand an existing surface mining operation that will add acreage to currently affected watersheds.

The watersheds for which this application is expanding, currently contains disturbances associated with an adjacent surface mining permit, Premier Elkhorn Coal Company permit 898-0378. Six new sediment structures and one fill are proposed under this application.

Please find attached the updated SDAA form as requested. The updated NOI-CM form has also been completed and included due to pond 53 and hollow fill 8 not being included in the original submittal of the NOI. Pond 31 is located below Hollow Fill No. 4 and provides sediment control for the area immediately to the north of a large portion of the proposed disturbances under Amendment 6 of this permit. The pond discharges into Bottom Fork and will provide a good representation of the permit area and all ponds approved and proposed as it collects discharges from mining in the all of the seams and overburden strata proposed under this amendment and all previous permitting actions. Coal seams represented are the Hazard 4, Hazard 4 Rider, Taylor, Hamlin and Peach Orchard. Pond 31 is an embankment pond located below all these seams and the associated overburden being removed making it a excellent candidate for representative sampling of the permit area.

In regards to sampling site itself, the latitude and longitude were incorrect on the effluent characteristics sheet creating the confusion that the pond was located at a great distance from the permit area. In actuality it is immediately above the proposed locations of Ponds 48, 49, 50, 51 and 52 and represents the same strata proposed for mining above Pond 53. The correct latitude and longitude has been shown on the effluent characteristics sheet in Section VI. Please refer to the attached MRP map for exact location of Pond 31 and all ponds proposed under Amendment 6. The sampling was taken directly from the outflow pipe of Pond 31 and the flow was determined to be .0216 MGD or 21600 gallons per day.

Refer to the attached maps for locations of the proposed disturbance areas.

If additional information is required or if any questions arise to the enclosed information please contact me at our Pikeville office (606) 437-6223.

Sincerely,

*Brent Hoselton*

Brent Hoselton

Project Manager



STEVEN L. BESHEAR  
GOVERNOR

**ENERGY AND ENVIRONMENT CABINET**  
DEPARTMENT FOR ENVIRONMENTAL PROTECTION  
DIVISION OF WATER  
200 FAIR OAKS LANE  
FRANKFORT, KENTUCKY 40601  
[www.kentucky.gov](http://www.kentucky.gov)

LEONARD K. PETERS  
SECRETARY

December 7, 2009

Mr. Robert J. Zik  
Premier Elkhorn Coal Company  
P.O. Box 130  
Myra, KY 41549

Re: **Bottom Fork; Letcher County**  
DNR#: **867-0371; Amend 6**  
KPDES#: **KYG044781**  
AI#: **14687**

Dear Mr. Zik:

The Division of Water (DOW) has received and reviewed your Notice of Intent (NOI-CM) application to obtain coverage under the Kentucky Pollutant Discharge Elimination System's (KPDES) "General Permit for Coal Mining" for the above referenced mine. The NOI was found to be deficient and no Socioeconomic Demonstration and Alternatives Analysis (SDAA) form has yet been submitted. The following items require immediate attention before DOW will continue review of this application:

- Applicant shall complete the most recent (2009) Socioeconomic Demonstration and Alternatives Analysis (SDAA) form. Neither the outdated HQAA nor the SDAA form was submitted with your June 2008 Notice of Intent form. Due to the August 2009 changes to the DOW antidegradation requirements, all new or expanded facilities must submit an SDAA in order to have a Public Notice of their application. A link to this form is provided below.
- Applicant shall complete the 2009 NOI-CM form; Section VI - Effluent Characteristics, according to the instructions. This section requires that outflows from each sediment structure within the permit be analyzed for the parameters listed. If the applicant can demonstrate that effluent from one outfall is substantially similar to others within the permit, then DOW **may** allow one sample to represent several outfalls. No demonstrations or justifications were provided with your NOI. Please note that demonstrations of "similarity" shall discuss; which ponds are being represented by the single sample(s), the proximity of the ponds, their receiving streams, and the coal seam(s) and the overburden being mined above each. If an adjacent mine can be demonstrated as substantially similar to the proposed mine, DOW **may** allow the applicant to analyze another operation's outflow.
- Applicant shall complete the 2009 NOI-CM form; Section VI - Effluent Characteristics, according to the instructions. The laboratory analyses submitted in July 2009 were from a sampling site identified as "031". There were no maps submitted to show the proximity of this site to other proposed ponds and your coordinates plotted 0.5 miles west of Pond #52 in Yont Fork.

There were no ponds identified in Yont Fork on your MRP map. Please note that samples cannot be collected from a stream channel, from the flow below a pond, or from the standing pool in a pond. Samples are to be taken from the outflow pipe of a pond and must include a flow rate in units of "gallons per day" (gpd). A report of "No Flow" is not acceptable. Your MRP does identify a "Pond 31" at the base of Hollow Fill #4 in Bottom Fork. This pond is 0.5 miles due north of proposed pond #48; not anywhere close to the coordinates provided for your effluent characteristic sample. If the applicant intends to use the analysis provided in July 2009 to assist the Effluent Characteristics requirements of this NOI, then a description of the sample site and a "demonstration of similarity" (described above) must be submitted. If the applicant requires more time to secure a sample from a flowing pond, a waiver request must be submitted by the company officer.

- Applicant shall **not** be required to submit an Enhanced Best Management Practices (EBMP) plan despite mine discharges entering an Impaired Water (IW). Boone Fork was identified by DOW's 305(b) report as an IW, but drainage from this proposed mine will travel more than 2.5 miles from the nearest pond and is not considered an impact.

Please note that failure to address these issues within a 30-day timeframe could result in termination of your General Permit application. Once the review has been terminated, restart will require the submission of an entire new application.

For your convenience the required 2009 forms can be obtained at [http://www.water.ky.gov/homepage\\_repository/kpdes\\_permit\\_aps.htm](http://www.water.ky.gov/homepage_repository/kpdes_permit_aps.htm)

If you have any questions regarding the Division's decision, please contact me at (502) 564-3410, extension 4895 or by e-mail at [larry.dusak@ky.gov](mailto:larry.dusak@ky.gov)

Sincerely,

{Signature}

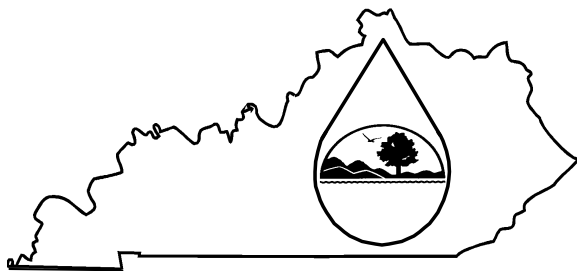
**Lawrence J. Dusak**

Operational Permits Section  
Surface Water Permits Branch  
Division of Water

LJS:ljd

c: Preparer of NOI - Todd Williams  
Site Contact - Stacy Billiter

# FORM NOI-CM



## KENTUCKY POLLUTION DISCHARGE ELIMINATION SYSTEM (KPDES)

### Permit Application for General Permit Coverage For Coal Mining Operations

This is an application for:

- ☐ New mining operation coverage.  
☒ Modification of coverage for additional area in same watershed.  
☐ Modification of coverage for additional area in different watershed.  
☐ Previously covered by an individual permit.

In order to qualify for coverage under the *Coal General Permit*, the coal mining operation must have obtained or is obtaining a *Surface Mining Control and Reclamation Act (SMCRA)* permit.

**For additional information contact:**  
**Surface Water Permits Branch (502) 564-3410**

If Modification is checked, state reason for Modification: Addition of sediment control structures. All are currently approved under Premier Elkhorn Coal Company permit #867-0371 (KYG044781)

For Agency Use	Permit No. (Leave Blank)	K	Y	G	0	4				
For Agency Use	AI ID (Leave Blank)									

#### SECTION I – PERMITTEE INFORMATION

Applicant Name: Premier Elkhorn Coal Company

Mailing Address: P.O. Box 130 City, State, Zip Code Myra, Kentucky 41549

Contact Name: Stacy Billiter Title: Company Engineer

Contact Name: Stacy Billiter Telephone Number: 606-639-0933 E-mail Address: sgbilliter@tecoenergy.com

#### SECTION II – GENERAL SITE INFORMATION

**Attach an Adobe Acrobat PDF file of the full color USGS 7½-minute quadrangle map with the facility site clearly marked.**

**Attach Adobe Acrobat PDF files of the Mining and Reclamation Plan map and the Environmental Resources Information map.**

**For Amendments or Modifications attach a Adobe Acrobat PDF file showing only the amended or modified areas.**

SMCRA Permit Number: 867-0371 Am. #6			Type of Operation: Surface/Underground Mine		
County where facility is located: Letcher			Nearest community: McRoberts		
Nearest public road intersection: Bottom Fork Road and KY Rt 343			Nearest named stream: Bottom Fork		
Latitude (decimal degrees): 37.209444		Longitude (decimal degrees): 82.682777		Method used (see instructions): Topo	
Surface acreage: Current: 825.86 Amended: 831.88			Underground acreage: Current: 646.18 Amended: 664.68		

#### SECTION III – SPECIFIC SITE INFORMATION

Number of sediment structures proposed:	6	(complete sediment structure inventory table on page 3)
Number of fills proposed:	1	(complete fill inventory table on page 4)
Number of stream crossings proposed:	0	(complete stream crossings inventory table on page 4)
Nearest downstream public water supply: WHITESBURG WATER WORKS Distance in stream miles 15.6		

#### SECTION IV – COE CWA SECTION 404 PERMIT INFORMATION

Has a Clean Water Act Section 404 permit been obtained from the Army Corps of Engineers for any or all sediment structures, fills or stream crossings? Pending

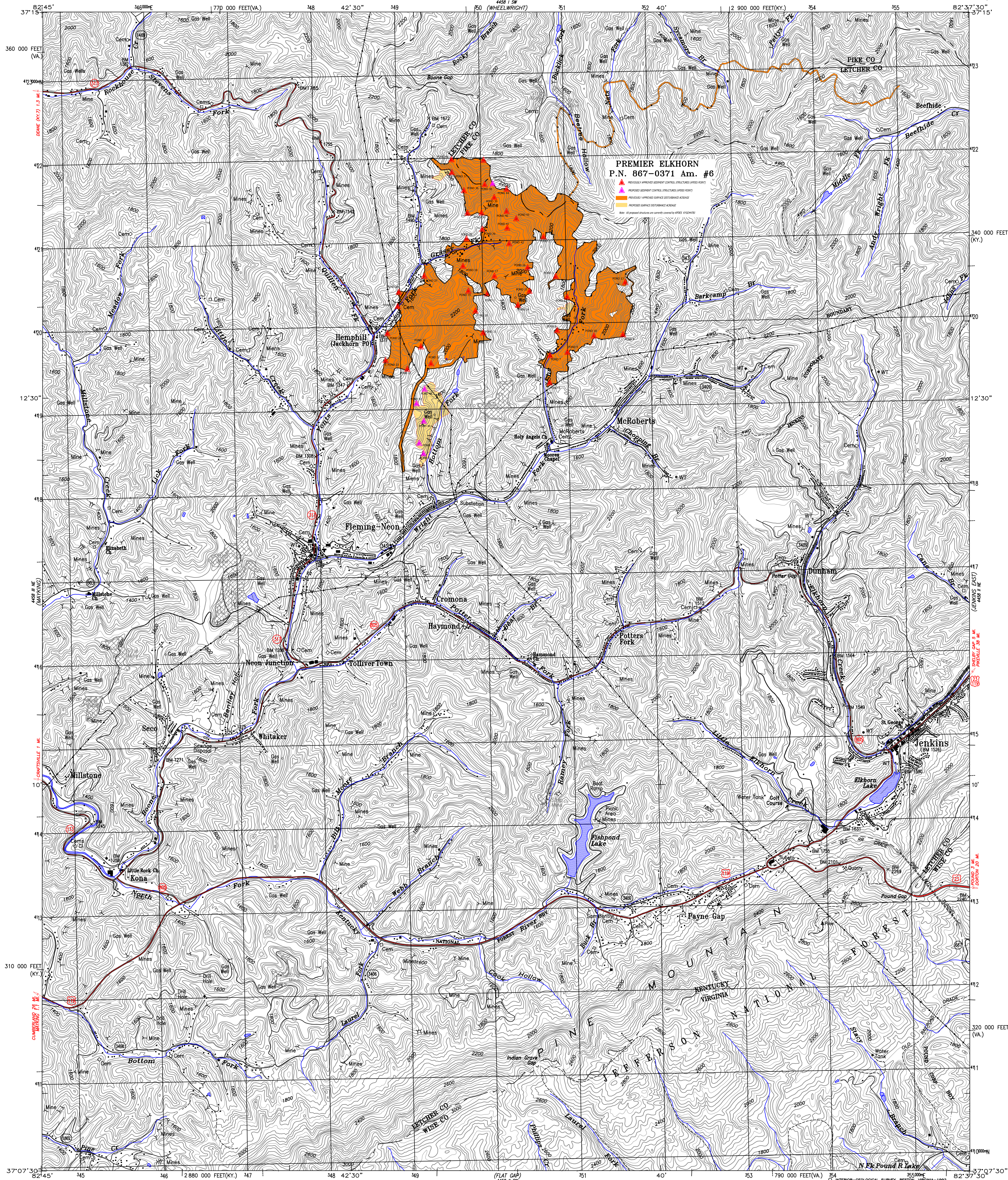
Permit Number: N/A Permit Issuance Date: N/A

Activities covered by permit:

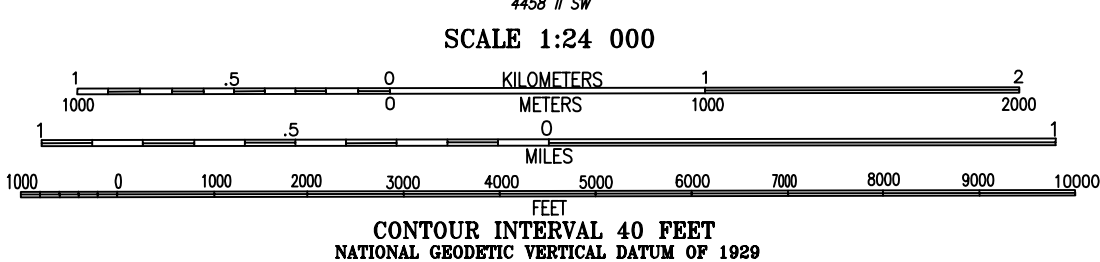
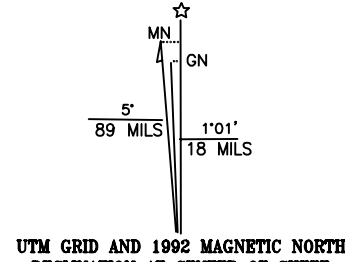


UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

JENKINS WEST QUADRANGLE  
KENTUCKY-VIRGINIA  
7.5 MINUTE SERIES (TOPOGRAPHIC)  
NW/4 POUND 15' QUADRANGLE



Produced by the United States Geological Survey  
and Kentucky Geological Survey  
Control by USGS and NOS/NOAA  
Topography by photogrammetric methods from aerial photographs  
taken 1947. Field checked 1954. Revised from aerial photographs  
taken 1988. Field checked 1990. Map edited 1992  
Projection: Kentucky coordinate system, south zone  
(Lambert conformal conic)  
10,000-foot grid ticks: Kentucky coordinate system, south zone  
and Virginia coordinate system, south zone  
1000-meter Universal Transverse Mercator grid, zone 17  
1927 North American Datum  
The difference between 1927 North American Datum and North  
American Datum of 1983 (NAD 83) for 7.5-minute intersections  
is given in USGS Bulletin 1876. The NAD 83 is shown by  
dashed corner ticks  
There may be private inholdings within the boundaries of  
the National or State reservations shown on this map



THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS  
FOR SALE BY U.S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092  
VIRGINIA DIVISION OF MINERAL RESOURCES, CHARLOTTESVILLE, VIRGINIA 22903  
KENTUCKY GEOLOGICAL SURVEY, LEXINGTON, KENTUCKY 40506  
AND KENTUCKY DEPARTMENT OF COMMERCE, FRANKFORT, KENTUCKY 40601  
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST



ROAD CLASSIFICATION  
Primary highway..... Light-duty road, hard or  
hard surface..... improved surface.....  
Secondary highway..... Unimproved road.....  
hard surface.....  
Interstate Route U.S. Route State Route

JENKINS WEST, KY-VA.  
NW/4 POUND 15' QUADRANGLE  
37082-B6-TV-024

1992

DMA 4458 II NW-SERIES V853

JENKINS WEST, KY-VA.  
PIKEVILLE PROJ-PPE

This map was vectorized from USGS Jenkins West Quadrangle, West Virginia-Virginia, 7.5 Minute Series,  
by Eastham & Associates, 100 Cedar Street, Chesapeake, Ohio, 45619, (614) 867-8369.  
(c) Copyright, Eastham & Associates. All rights reserved. (See License Agreement).



# FORM NOI-CM

SECTION V – OTHER ENVIRONMENTAL APPROVALS AND PERMIT INFORMATION			
CATEGORY	EXISTING PERMIT WITH NUMBER	PERMIT NEEDED WITH PLANNED APPLICATION DATE	
401 Water Quality Certification	N/A		
Drinking Water	N/A		
Wastewater Construction	N/A		
Water Withdrawal	N/A		
Air Emissions	N/A		
Solid or Special Wastes	N/A		
Hazardous Waste Registration /Permit	N/A		

SECTION VI – EFFLUENT CHARACTERISTICS	
Samples and analysis for the pollutants or pollutant characteristics listed on the Effluent Characteristics Data Sheet (page 5) shall be performed for each, sediment control structure, either existing or proposed, within each watershed. All samples and analysis are to be taken and performed in accordance with the requirements of 40 CFR Part 136. Complete an Effluent Characteristics Data Sheet for each sample collected and analyzed.	

SECTION VII – BEST MANAGEMENT PRACTICES (BMP) PLAN	
Check one the following boxes.	
<input checked="" type="checkbox"/> The generic Coal BMP Plan shall be completed and implemented for this activity within 90 days of the granting of coverage under the KPDES Coal General Permit. <input type="checkbox"/> A site specific BMP shall be developed, and implemented for this activity within 90 days of the granting of coverage under the KPDES Coal General Permit. (A copy of the BMP shall be submitted to the DOW for review and comment prior to implementation.) <input type="checkbox"/> The Oil & Grease requirements of the KPDES Coal General Permit shall be followed.	

SECTION VIII – CERTIFICATION	
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	
NAME AND OFFICIAL TITLE (Type or Print)	Robert J. Zik, Vice-President
Telephone Number: (Area Code and Number)	( 606 ) 523-4444
SIGNATURE:	DATE: 12/3/09

SECTION IX – NOI PREPARER INFORMATION	
Preparer Name:	Mark C. Spears
Company Name	Alpine Consulting & Engineering, Inc.
Mailing Address:	P.O. Box 3203
City, State, Zip Code:	Pikeville, KY 41502
Phone Number:	Work # ( 606 ) 437- 6223 e-mail Address: mspears@alpine-eng.com

This completed application form and attachments should be sent to: Surface Water Permits Branch, Division of Water, 200 Fair Oaks Lane, Frankfort, Kentucky 40601. Questions should be directed to: Surface Water Permits Branch, Operational Permits Section at (502) 564-3410.

# FORM NOI-CM

## Sediment Structure Inventory

ID Number	Upland/ In stream	Permanent/ Temporary	Drainage Area (acres)	Activities	Latitude	Longitude	Receiving Water (name)
P-48	Upland	Temporary	5.8	Surface Mining	37-12-29	82-41-42	Bottom Fork
P-49	Upland	Temporary	6.5	Surface Mining	37-12-17	82-41-43	Bottom Fork
P-50	Upland	Temporary	4.5	Surface Mining	37-12-08	82-41-46	Bottom Fork
P-51	Upland	Temporary	3.7	Surface Mining	37-12-04	82-41-44	Bottom Fork
P-52	Upland	Temporary	13.4	Surface Mining	37-12-24	82-41-46	Bottom Fork
P-53	Upland	Temporary	9.6	Surface Mining	37-13-48	82-41-05	Bucklick Fork

### Instructions

#### LIST ONLY NEW OR PREVIOUSLY UNPERMITTED STRUCTURES

ID Number: Provide the structure's identification number.

Upland/In stream: Indicate whether the structure is on the bench, in-stream or upland.

Permanent/Temporary: Indicate whether the structure is permanent or temporary

Drainage Area: Provide the contributing drainage area in acres.

Activities: List the types of activities within the contributing drainage area, i.e; fills, haul roads, surface mines, underground mines, etc.

Latitude: Provide the latitude of the structure.

Longitude: Provide the longitude of the structure.

Receiving Stream: Name of the water body, which receives the structure's discharges.

(Attach additional pages if necessary)



# FORM NOI-CM

## Fill Inventory

ID Number	Permanent/Temporary	Fill Size (acres)	Watershed Size (acres)	Latitude (dd-mm-ss)	Longitude (dd-mm-ss)	Impacted Stream (name)
HF-8	Permanent	3.3	15.3	37-12-21	82-41-46	Bottom Fork

### Instructions

ID Number: Provide the structure's identification number.  
Permanent/Temporary: Indicate whether the fill is permanent or temporary  
Size: Provide the size of the fill in acres.  
Watershed: Provide the watershed size in acres above the lowest point of the permanent fill.  
Latitude: Provide the latitude of the fill.  
Longitude: Provide the longitude of the fill.  
Impacted Stream: Name of the water body in which the fill is being placed

(Attach additional pages if necessary)

## Stream Crossings Inventory – N/A

ID Number	Permanent/Temporary	Stream Crossing Type	Watershed Size (acres)	Latitude (dd-mm-ss)	Longitude (dd-mm-ss)	Impacted Stream (name)

### Instructions

ID Number: Provide the stream crossing's identification number.  
Permanent/Temporary: Indicate whether the stream crossing is permanent or temporary  
Type: Provide the type of crossing, i.e. bridge, culvert, low water, etc.  
Watershed: Provide the watershed size in acres above the stream crossing.  
Latitude: Provide the latitude of the stream crossing.  
Longitude: Provide the longitude of the stream crossing.  
Impacted Stream: Name of the water body in which the stream crossing is being placed



# FORM NOI-CM

Effluent Characteristics Data Sheet – (Sample obtained from sediment structure Pond #31 on permit #867-0371)

Outfall No. KYG044781-031	Latitude: 37-12-38		Longitude: 82-41-38		Receiving Water: Bottom Fork	
Pollutant or Pollutant Characteristic	Value	Units	Sample Type	Analytical Method Used	Method Detection Level	
Total Suspended Solids	2	mg/l	grab	SM 2540 D	N/L	
Flow	0.0216	mgd	grab	Volumetric	N/L	
pH	8.33	std	grab	SM 4500 H+-B	0.03	
Hardness (as mg/l CaCO <sub>3</sub> )	708.15	mg/l	grab	SM 2340 B	0.02	
Sulfate (as SO <sub>4</sub> )	748	mg/l	grab	SM 426 C	1	
Total Recoverable Aluminum	39.6	µg/l	grab	EPA 200.8	0.435	
Total Recoverable Iron	0.071	mg/l	grab	EPA 200.7	0.004	
Total Recoverable Manganese	15.9	µg/l	grab	EPA 200.8	0.017	
Total Recoverable Antimony	0.079	µg/l	grab	EPA 200.8	0.009	
Total Recoverable Arsenic	0.379	µg/l	grab	EPA 200.8	0.052	
Total Recoverable Beryllium	0.039	µg/l	grab	EPA 200.8	0.019	
Total Recoverable Cadmium	0.023	µg/l	grab	EPA 200.8	0.007	
Total Recoverable Chromium	6.02	µg/l	grab	EPA 200.8	0.167	
Total Recoverable Copper	1.66	µg/l	grab	EPA 200.8	0.026	
Total Recoverable Lead	0.055	µg/l	grab	EPA 200.8	0.016	
Total Recoverable Mercury	<0.5	ng/l	grab	EPA 1631-E	0.5	
Total Recoverable Nickel	2.46	µg/l	grab	EPA 200.8	0.039	
Total Recoverable Selenium	0.062	µg/l	grab	EPA 200.8	0.032	
Total Recoverable Silver	ND	µg/l	grab	EPA 200.8	0.009	
Total Recoverable Thallium	ND	µg/l	grab	EPA 200.8	0.011	
Total Recoverable Zinc	2.69	µg/l	grab	EPA 200.8	0.581	
Free Cyanide	<0.004	mg/l	grab	SM 4500 CN E	0.004	
Total Phenols	<0.004	mg/l	grab	EPA 420.1	0.004	
Conductivity	1300	umhos/cm	grab	SM 2510 B	1	

## Instructions

Outfall Number: Provide the outfall number. (use following naming convention -KYG04XXXX-XXX)  
 Latitude: Provide the latitude of the discharge point or sample point.  
 Longitude: Provide the longitude of the discharge point or sample point.  
 Receiving Water: Provide the name of the receiving water discharged to or sampled  
 Where sample was collected: Check either sediment structure or in-stream  
 Value: Report the numerical results of the analysis for the pollutant or pollutant characteristic  
 Units: Indicate the units, i.e. mg/l, MGD, standard units, °F, etc.  
 Sample Type: Indicate how the sample was collected, i.e. grab, composite, weir, instantaneous, etc.  
 Analytical Method: Indicate the EPA test method used for analysis of the pollutant or pollutant characteristic  
 Method Detection Level: Indicate the MDL for the EPA test method used.

(Attach additional pages if necessary)





APPALACHIAN STATES ANALYTICAL, L.L.C.

PO Box 520  
Shelbiana, KY 41562

Premier Elkhorn Coal Corp.  
PO Box 130  
Myra, KY 41549

Date Received 6/30/09  
Date Reported 7/21/09  
Order Number 2009-06070

ATTN: Sid Stanley

TEST DESCRIPTION	RESULT	UNITS	METHOD	MDL	DATE	TECH
Fraction	2009-06070001					
Sample I.D	31 (867-0371)					
Date Sampled	6/30/2009					
Ky Coal Permit Quality Pkg						
Total Suspended Solids	2	mg/l	SM 2540D	1	7/01/2009	JKB
Flow	0.0216	mgd			6/30/2009	LJ
pH, Field	8.33	std	SM 4500 H+ -B	0.03	6/30/2009	LJ
Hardness	708.15	mg/l	SM 2340B	0.02	7/01/2009	SM
Sulfate	748	mg/l	SM 426 C	1	7/01/2009	TT
Specific Conductance	1300	umhos/cm	SM 2510 B	1	7/07/2009	TV
Free Cyanide	<0.004	mg/l	SM 4500CN-E	0.004	7/10/2009	SC
Phenols, Ky KPDES P Renewal	<0.004	mg/l	EPA 420.1, Hach	0.004	7/16/2009	SC



# AC & S, Incorporated

Serving the chemical industry since 1986

Specialty Chemical - Laboratory Services - Rail Tank Cleaning

## Report of Analysis

**Name:** Appalachian States Analytical  
Ama Bentley  
P.O. Box 520  
Shelbiana, KY 41562

**Sample ID#:** 09972364  
**Sample Source:** Grab  
Elkhorn 31 898-0371  
**Client Sample** Premier Elkhorn

**Sample Date:** 6/30/2009 15:15

**Receipt Date:** 7/2/2009 19:30

**Report Date:** 7/20/2009

Parameter	Sample Result	Units	MDL	Analysis Start	Analysis End (If Applicable)	Method	Analyst
<b>Metals</b>							
Total Recoverable Aluminum	39.6	ug/L	0.435	07/10/09 14:37		EPA 200.8	ESW
Total Recoverable Antimony	0.079	ug/L	0.009	07/10/09 14:37		EPA 200.8	ESW
Total Recoverable Arsenic	0.379	ug/L	0.052	07/10/09 14:37		EPA 200.8	ESW
Total Recoverable Beryllium	0.039	ug/L	0.019	07/10/09 14:37		EPA 200.8	ESW
Total Recoverable Cadmium	0.023	ug/L	0.007	07/10/09 14:37		EPA 200.8	ESW
Total Recoverable Chromium	6.02	ug/L	0.167	07/10/09 14:37		EPA 200.8	ESW
Total Recoverable Copper	1.66	ug/L	0.026	07/10/09 14:37		EPA 200.8	ESW
Total Recoverable Iron	0.071	mg/L	0.004	07/09/09 15:10		EPA 200.7	ESW
Total Recoverable Lead	0.055	ug/L	0.016	07/10/09 14:37		EPA 200.8	ESW
Total Recoverable Manganese	15.9	ug/L	0.017	07/10/09 14:37		EPA 200.8	ESW
Total Recoverable Nickel	2.46	ug/L	0.039	07/10/09 14:37		EPA 200.8	ESW
Total Recoverable Selenium	0.062	ug/L	0.032	07/10/09 14:37		EPA 200.8	ESW
Total Recoverable Silver	ND	ug/L	0.009	07/10/09 14:37		EPA 200.8	ESW
Total Recoverable Thallium	ND	ug/L	0.011	07/10/09 14:37		EPA 200.8	ESW
Total Recoverable Zinc	2.69	ug/L	0.581	07/10/09 14:37		EPA 200.8	ESW

Reviewed by:

Rebecca Kiser

**AC&S, Inc.**  
**P.O. Box 335**  
**Nitro, WV 25143**

ND = Not Detected  
\* = Above Specified Limit

**Note:** The test results are only valid for date sample was taken. We do not accept any liability for use of these results.



**Report of  
Laboratory  
Analysis**

**Reported To:**

Ama Bowman  
APPALACHIAN STATES ANAL.

P.O. BOX 520  
SHELBIANA, KY 41562

**Order No.:** 2009070077

**P.O. No.:** 310609

**Date Received:** 07/01/2009

**Report Date:** 07/16/2009

**Testing Analysis**

**Sample No.:** 1 **Comments:** 2009-06070-001 **Location:** EFF 31 867-0371  
**Date Collected:** 06/30/2009 **PRIEMIER ELKHORN**  
**Collected by:** RB  
**Lab ID.:** W07-010 **Matrix:** Pond Water

Laboratory Test	Results	Test Units	Test Analyst	Detection Limit	Test Method	Date of Analysis
MERCURY -Low Level	<0.5	ng/L	JH	0.5	EPA-1631E	07/15/2009

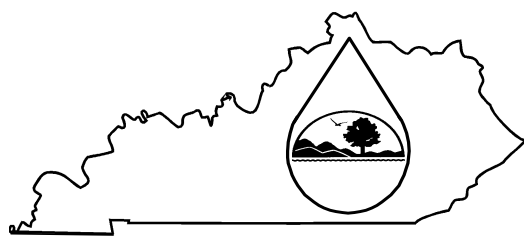
**Sample No.:** 2 **Comments:** 2009-06070-001 **Location:** EFF 31 867 0371  
**Date Collected:** 06/30/2009 **PRIEMIER ELKHORN**  
**Collected by:** RB  
**Lab ID.:** W07-011 **Matrix:** Pond Water

Laboratory Test	Results	Test Units	Test Analyst	Detection Limit	Test Method	Date of Analysis
MERCURY -Low Level	<0.5	ng/L	JH	0.5	EPA-1631E	07/15/2009

**Sample No.:** 3 **Comments:** 2009-06070-001 **Location:** FIELD BLANK 31  
**Date Collected:** 06/30/2009 **PRIEMIER ELKHORN** 867-0371  
**Collected by:** RB  
**Lab ID.:** W07-012 **Matrix:** Pond Water

Laboratory Test	Results	Test Units	Test Analyst	Detection Limit	Test Method	Date of Analysis
MERCURY -Low Level	<0.5	ng/L	JH	0.5	EPA-1631E	07/15/2009





# Kentucky Pollutant Discharge Elimination System (KPDES)

## Socioeconomic Demonstration and Alternatives Analysis

The Antidegradation Implementation Procedure found in 401 KAR 10:030, Section 1(3)(b)3 requires KPDES permit applications for new or expanded discharges to waters categorized as "Exceptional or High Quality Waters" to conduct a socioeconomic demonstration and alternatives analysis to justify the necessity of lowering local water quality to accommodate important economic or social development in the area in which the water is located. This demonstration shall include this completed form and copies of any engineering reports, economic feasibility studies, or other supporting documentation

### I. Project Information

**Facility Name:** Bottom Fork Surface/Underground Mine (DMRE Permit #867-0371 Amendment No. 6)

**Location:** KY Route 343 & Bottom Fork County Road

**County:** Letcher

**Receiving Waters Impacted:** Bottom Fork of Wright Fork, She Fork of Wright Fork and Wolfpen Branch of Grassy Fork

### II. Socioeconomic Demonstration

#### 1. Define the boundaries of the affected community:

(Specify the geographic region the proposed project is expected to affect. Include name all cities, towns, and counties. This geographic region must include the proposed receiving water.)

The proposed amendment areas will be located on Bottom Fork of Wright Fork, She Fork of Wright Fork and Wolfpen Branch of Grassy Fork near the community of McRoberts in Letcher County. The proposed receiving stream channels will be Bottom Fork of Wright Fork, She Fork of Wright Fork and Wolfpen Branch of Grassy Fork. These streams are tributaries of Yonts Fork of the North Fork of the Kentucky River. The proposed project area is approximately 0.5 miles northwest of KY Route 343 & Bottom Fork County Road at latitude of 37° 12' 34" and longitude of 82° 40' 58". The surface/underground disturbance associated with the amendment area is located on the Jenkins West USGS 7½ minute quadrangle maps.

#### 2. The effect on employment in the affected community:

(Compare current unemployment rates in the affected community to current state and national unemployment rates. Discuss how the proposed project will positively or negatively impact those rates, including quantifying the number of jobs created and/or continued and the quality of those jobs.)

Based upon estimates of the USDA-Economic Research Service, the unemployment rate for Letcher County in 2008 was 6.9% compared to 6.4% statewide and 5.8% nationally.

The cumulative economic impact of the proposed project will be to contribute to the overall present economy in Letcher County. Not only will the proposed project directly contribute to the mining industry, but will contribute to other sectors closely related to the mining industry. These sectors will include trucking companies, mine supply companies, equipment sales companies, fuel sales companies, engineering firms, and other sectors that depend upon the mining industry as a part of their accounts receivable base. Letcher County heavily relies on the coal industry as a part of its viable economy, as do most counties in the region. Letcher County mining accounted for 11.5% of all employment in FY 2004 and accounted for 21.5% of total county wages (KY Coal Facts). As old mining operations close, new operations must be opened in order for the local economy to sustain its current level. History has shown that a 'slow down' in the coal industry directly impacts differing business sectors within the region.

While retail and services employed the greatest percentages of workers in Letcher County in 2004, the mining, public administration, and information sectors provided the highest average weekly wage (U.S. Department of Labor, Bureau of



Labor Statistics). The mining industry paid an average weekly wage of \$748.02. It is estimated that the proposed surface/underground mining operation will pay out an annual payroll of approximately \$1,166,911 to approximately 30 employees. Additionally, the proposed mining project would support employment for sectors that provide a service to the mining industry, i.e. material sells equipment sells/rentals, etc. The money paid out would be circulated throughout the community and help create a local healthy economy. The total number of American jobs created both directly and indirectly by the domestic mining industry was more than 3 times the number of workers directly involved in mining (KY Coal Facts). Thus, approximately 90 people would be indirectly impacted by the proposed surface mining operation, in addition to the 90 persons/families directly related.

The proposed amendment to the surface/underground mining operation will add new mining areas that will possibly create employment for persons currently unemployed or for persons currently working at other mining facilities that are nearing completion, and perhaps will become unemployed if new job opportunities are not presented. The jobs created by the proposed operation will be permanent during the life of the operation. Additionally, the proposed operation may possibly create jobs indirectly related to the operation as additional mining operations create demands for operational supplies. Thus, the 50 employees needed to conduct the proposed mining operation will be able to continue working within the mining industry.

The 2000 census results showed that Letcher County had a total population of 25,277 and had a population of 23,702 in 2008, a decrease of 6.2%. The decrease in population may result from relocations due to unavailable employment. 26.6 percent of Letcher County residents lived below the poverty range in 2008. The median household income for residents residing in Letcher County in FY 2008 was \$29,415. The proposed mining operation will aid in raising the average annual household income and will help increase job opportunities in the region.

## **II. Socioeconomic Demonstration- continued**

### **3. The effect on median household income levels in the affected community:**

(Compare current median household income levels with projected median household income levels. Discuss how proposed project will positively or negatively impact the median household income in the affected community including the number of households expected to be impacted within the affected community.)

The median household income level for Letcher County in 2008 was \$29,415 (USDA-Economic Research Service). Jobs continued by the proposed project would produce an average annual income per employee of approximately \$38,897, which is 32% more than the county median household income. Continuation of employment for the proposed operation would positively impact approximately 30 households directly within the surrounding community and approximately 90 households indirectly. The market value of surrounding taxable property would increase over time with continued quality paying employment, such as offered by the proposed project. Additionally, the continued employment would aid with educational opportunities, better health care, and the provision of everyday basic necessity needs (ie. food, shelter, and clothing).

The annual income paid to miners for the proposed project would increase the purchasing power of Letcher County by \$1,166,911 annually and the effects would trickle to other related and unrelated industries throughout the community.

### **4. The effect on tax revenues of the affected community:**

(Compare current tax revenues of the affected community with the projected increase in tax revenues generated by the proposed project. Discuss the positive and negative social and economic impacts on the affected community by the projected increase.)

The mining industry contributes to the local tax base through taxes on real and personal property, which in turn funds public services. During active stages of a mining operation, the property is assessed at a higher value when real property taxes are determined. Prior to mining activities or post mining activities, the idle property has a much lower value and property taxes paid do not contribute as much to the local economy. Personal property taxes are levied on the equipment utilized during a mining operation. A surface mining operation requires the purchase and use of numerous, very expensive, pieces of equipment during the life of the operation. The purchase of mining equipment drives the industry's sizable contribution to the personal property tax base because new equipment is expensive and depreciates rapidly. Property tax payments will be received from the operator during the life of the project, otherwise if not permitted, property tax payments received by Letcher County would be a lesser amount. The state severance tax is a gross receipt tax levied on businesses that sever, extract, and/or produce natural resource products, including coal, in Kentucky. The goal of the severance tax is to provide producing counties with funds to develop alternative industries to sustain the communities in the future once this natural resource is exhausted. The proposed amendment would generate approximately \$40,929 (based on a minimum of \$0.50/ton with approximately 81,858 tons of recoverable reserve) in addition to the severance taxes already collected from completed coal removal operations and coal removed through proposed augering. Although a majority of the tax revenue is directed to the state, a large portion will directly benefit Letcher County. During FY 2005 coal taxes were received by Letcher County totaled \$1,591,956 (KY Coal Facts).



## **II. Socioeconomic Demonstration- continued**

### **5. The effect on an existing environmental or public health in affected community:**

(Discuss how the proposed project will have a positive or negative impact on an existing environmental or public health.)

The proposed surface/underground mining operation will be performed in accordance with all state and federal regulations governing the coal mining industry to ensure environmental and public health. The proposed area has been previously logged. The previous disturbances were performed without sediment control in-place, thus, excessive sediment was allowed to enter the receiving stream channel. The proposed amendment will provide sediment control via sediment control ponds that will be located downstream and on-bench from the proposed disturbance area. All discharges that will be created by proposed mining disturbances will pass through a sediment structure. The proposed sediment control ponds will capture sediment runoff from the proposed surface disturbance areas as well as from the previously disturbed areas. The sediment control structure will allow the receiving stream to recover from previous sedimentation and prior to removal of said sediment control ponds all disturbed areas, previous and proposed, will be revegetated. This will create a better habitat for aquatic organisms within the receiving stream channel.

### **6. Discuss any other economic or social benefit to the affected community:**

(Discuss any positive or negative impact on the economy of the affected community including direct and or indirect benefits that could occur as a result of the project. Discuss any positive or negative impact on the social benefits to the community including direct and indirect benefits that could occur as a result of the project.)

Due to the economic impact of the coal industry throughout Kentucky in 2004, in addition to 15,012 persons working at the mines, 6,021 persons worked in factories making everything from mining equipment to home appliances; 2,617 persons drove coal trucks and cargo trucks, worked at rail yards, etc.; 12,704 persons worked in warehouses, sold clothing, appliances, furniture, in retail stores, etc.; 12,470 persons worked in banks, law offices, engineering firms, accounting firms, and other service businesses; 4,366 persons built homes, offices, factories, and highways; and 7,968 others were teachers, government officials, and a wide variety of other professions and occupations. (KY Coal Facts)

The mining industry accounted for 944 jobs directly related to mining in 2004 in Letcher County and made up 11.5% of the total labor force. Wages paid out to miners in Letcher County in 2004 totaled \$36,718,975, comprising 21.5% of the county's total wages with an average weekly salary of \$748.02.

### **III. Alternative Analysis**

#### **1. Pollution prevention measures:**

(Discuss the pollution prevention measures evaluated including the feasibility of those measures and the cost. Measures to be addressed include but are not limited to changes in processes, source reductions or substitution with less toxic substances. Indicate which measures are to be implemented.)

The applicant is proposing an amendment to a coal removal operation and will remove the coal reserves by utilizing surface/auger mining methods. An alternative to this removal method would be that of underground mining. Coal removal by underground mining methods of the proposed reserves is impractical, as the coal beds within the reserve area cannot be economically mined via the underground mining method due to the nature of the reserves. The multiple seams and their relative elevations from the surface would make it dangerous and impractical to deep mine. Subsidence would be a major factor and the safety of the miners would be compromised through underground mining methods. Percent recovery would also be reduced from 90+ percent for surface mining to 50 percent through underground methods.

The main pollution prevention measure implemented for the proposed project will be the construction of the proposed sedimentation ponds. The sedimentation ponds will prevent excessive sediment from reaching the receiving stream, as runoff from the surface disturbance areas will be directed through the sedimentation ponds upon which the sediment will 'settle-out' prior to the water discharging from the structure. Other pollution prevention measures for the proposed project would include the construction of on-site diversions to convey water around disturbed areas, preventing runoff from undisturbed areas from entering disturbed areas and to prevent runoff from disturbed areas from entering undisturbed areas prior to entering sediment control structure(s).

#### **2. The use of best management practices to minimize impacts:**

(Discuss the consideration and use of best management practices that will assist in minimizing impacts to water quality from the proposed permitted activity.)

During the lifetime of the proposed surface/underground mining activity, the operator will implement best management practices that will aid in the avoidance of possible impacts on aquatic resources. Best management practices considered and will be implemented in appropriate situations include, but are not limited to, any of the following, singly or in combination: basins, diversion ditches, filter strips, land grading & reshaping, mulching, placement of rip-rap, rapid revegetation (especially along stream banks), rock check dams, silt fences, straw bale barriers, stream bank stabilization, sumps, and work in periods of no or low flow or dry weather.

The main best management practice to be implemented will be the construction of the proposed sediment ponds. The sediment ponds will capture runoff from surface disturbance areas and remove sediment fines prior to the water being discharged to the local stream channel. The sediment ponds have been designed and will be constructed to handle a 25 year/24 hour precipitation event and will be placed away from any steep topography or buffer zones. During construction of the sediment ponds, alternative sediment control devices (ie. silt fences and straw bale dikes) will be utilized to prevent excessive sediment from entering the local stream channel. All sediment structures will be inspected following significant rainfall events and at minimum quarterly inspections will be performed by qualified personnel.



**3. Recycle or reuse of wastewater, waste by-products, or production materials and fluids:**

(Discuss the potential recycle or reuse opportunities evaluated including the feasibility of implementation and the costs. Indicate which of, of these opportunities are to be implemented)

The proposed amendment will add an additional six (6) discharge locations (sedimentation ponds) that will discharge into Bottom Fork of Wright Fork. 5.5 acres of proposed mining areas added will utilize existing sediment control structures. The proposed discharge points will control runoff from approximately 21.4 surface disturbance acres via sedimentation ponds and assuming that the ponds maintain a full volume of water, the total volume of water available for recycling uses each month would be approximately 600,633 gallons (based on proposed pond capacities). Approximately 20,000 gallons of stored water each month (during the months of June, July, and August each year) could be reused as a dust suppressant for road facilities. Re-distribution of the water to the surrounding surface areas would be difficult, as the surrounding slopes average 27° and runoff would create additional potential environmental damage.

An additional on-site reuse of waters to be evaluated is that of utilizing the water during reclamation operations. As proposed, the proposed amendment area would require a total of 26.9 acres of reclamation/revegetation. Water utilized within hydroseeders during reclamation would provide a need of approximately 67,250 gallons of water (one truck-load of 2500 gallons per acre), thus the total amount utilized would not eliminate the discharges generated during the mining operation. No other water is needed for recycling or reuse with this operation.

In order to recycle the additional amount of generated wastewater to potable drinking water, the discharge would have to be transferred to the City of Whitesburg drinking water treatment facility located approximately 15.6 miles southwest of the proposed discharge location within the city of Whitesburg. Thus, the cost associated with the transfer of the discharges to the treatment facility would be \$5,518,656 (82,368 feet of 24" diameter HDPE pipe at \$67.00/linear foot) to run a 24" diameter HDPE pipe to the nearest treatment facility.

### III. Alternative Analysis - continued

#### 4. Application of water conservation methods:

(Discuss the potential water conservation opportunities evaluated including the feasibility of implementation and the costs. Indicate which of, of these opportunities are to be implemented)

Re-using the captured storm water would conserve the stream. Thus, the water conservation procedure for the proposed mining operation will be to re-use the captured storm water for on-site dust control, hydroseeding operations, and where possible, irrigation operations. (The requirement for water conservation via irrigation methods is slope readings of no greater than 6%).

Mining activities are not normally water dependent operations; however, all captured water will be recycled/re-used to the fullest extent possible. The water stored in sediment ponds will be re-distributed to the local stream channel once the pond has reached full capacity (spillway elevation). Upon full capacity, the flow to the local stream channel will be the same as pre-mining conditions. Water losses would only result from evaporation and infiltration, which both losses would result in recycling as the evaporation contributes to rainfall and infiltration will feed back to the local stream channel.

#### 5 Alternative or enhanced treatment technology:

(Compare feasibility and costs of proposed treatment with the feasibility and costs of alternative or enhanced treatment technologies that may result in more complete pollutant removal. Describe each candidate technology including the efficiency and reliability in pollutant removal and the capital and operational costs to implement those candidate technologies. Justify the selection of the proposed treatment technology.)

Several alternatives for treating water from the project area and discharging it to streams and rivers in the area have been evaluated. These alternatives include construction of a water treatment facility, construction of physical filter barriers, chemical treatment of drainage, and construction of wetlands.

**Water Treatment Facility** Construction of a small water treatment facility (500,000 gallons per day) on the project site would cost over \$1.6 million dollars, plus an additional cost of \$50,000 for a containment reservoir. Because of the high cost of construction and the short life of the proposed operation (ten years) the on-site water treatment facility would not be feasible.

**Physical Filter Barriers** Physical filter barriers such as silt fences and straw bales are designed for use with small discharges and would not be able to handle the large discharge flow generated nor would they meet requirements of the Commonwealth of Kentucky's Surface Mine Regulations as set forth in 405 KAR 16:070. However, physical filter barriers will be utilized to minimize impacts to local stream channels during construction and removal of the sediment ponds.

**Chemical Treatment** Chemical treatment of drainage was also considered. The primary treatment required at the proposed site is the removal of sediments, which would require the use of sediment ponds to hold the runoff water from surface disturbance areas while the sediment fines settle out. Chemicals may augment this process, but sediment removal is not possible using chemical treatment alone. It would not be cost efficient to chemically treat the entire column of discharge at the proposed site.

**Wetland Construction** Constructed wetlands have traditionally been used for biological treatment. The discharge to be generated by the proposed project is highly sediment laden. Wetlands could be a suitable mechanism for treatment of the conductivity; however, sediment ponds provide a similar function at a much less cost. Furthermore, the proposed project area is located at higher elevations, well above the valley bottoms. Thus, the constructed wetland area would have to be in the valley bottom and this would create additional impacts to the upper reaches of the local stream channels.



### III. Alternative Analysis - continued

#### 6. Improved operation and maintenance of existing treatment systems:

(Discuss improvements in the operation and maintenance of any available existing treatment system that could accept the wastewater. Compare the feasibility and costs of improving an existing system with the feasibility and cost of the proposed treatment system.)

The storm water runoff from the proposed surface disturbance areas will be captured in sediment pond structures prior to discharge to local stream channel(s). This will allow settling out of excessive sediment fines so that lowering of water quality will be minimized based on applicable regulations concerning discharges from the proposed project site. In order for larger sediment ponds to be constructed that would further increase the settling time of sediments, the proposed sediment ponds would have to be moved from their on-bench locations and located further downstream within the valley bottom. This would increase surface disturbance and directly impact the local stream channel, as the sediment ponds would be constructed within the stream channel. The environmental impact would be greater with this scenario.

In order to recycle the additional amount of generated wastewater to potable drinking water, the discharge would have to be transferred to the City of Whitesburg drinking water treatment facility located approximately 15.6 miles southwest of the proposed discharge location within the city of Whitesburg. Thus, the cost associated with the transfer of the discharges to the treatment facility would be \$5,518,656 (82,368 feet of 24" diameter HDPE pipe at \$67.00/linear foot) to run a 24" diameter HDPE pipe to the nearest treatment facility.

#### 7. Seasonal or controlled discharge options:

(Discuss the potential of retaining generated wastewaters for controlled releases under optimal conditions, i.e. during periods when the receiving water has greater assimilative capacity. Compare the feasibility and cost of such a management technique with the feasibility and cost of the proposed treatment system.)

The proposed sediment control structure has been designed to control a 25 year/24 hour storm event. This means that the pond was designed and will be constructed to handle a rainfall event within a 24 hour period of the intensity such as only normally occurring once within a 25 year period. Thus, once the proposed ponds are filled with water the receiving stream flow will be that of pre-mining conditions. The pond will fill to the spillway elevation and will flow through the spillway and will maintain a hydrologic controlled release in accordance with normal stream flow rates. During high flow conditions the pond will release water at such a rate that normal stream flow conditions are maintained. Additionally, during low flow conditions the pond will retain water that will in-turn maintain normal stream flow conditions.

The capacity of the physical, chemical and biological processes to assimilate is interconnected and based on the features of the streamscape (the stream, flood plain and riparian zone). Even though the removal of natural features such as vegetative cover may compromise the abilities of stream assimilative processes, construction of the sediment ponds will mitigate the impacts. The sediment ponds will retard the velocity of the storm water runoff and enhance sediment filtering and reduce its deposition.

### III. Alternative Analysis - continued

#### 8 Land application or infiltration or disposal via an Underground Injection Control Well

(Discuss the potential of utilizing a spray field or an Underground Injection Control Well for shallow or deep well disposal. Compare the feasibility and costs of such treatment techniques with the feasibility and costs of proposed treatment system.)

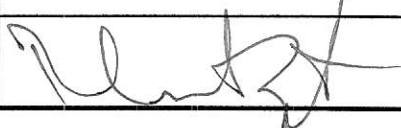
See AT-III

#### 9 Discharge to other treatment systems

(Discuss the availability of either public or private treatments systems with sufficient hydrologic capacity and sophistication to treat the wastewaters generated by this project. Compare the feasibility and costs of such options with the feasibility and costs of the proposed treatment system.)

See AT-III

**IV Certification:** I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name and Title:	Robert J. Zik, Vice-President	Telephone No.:	(606) 523-4444
Signature:		Date:	12/2/09



### **III. Alternative Analysis - continued**

#### **8 Land application or infiltration or disposal via an Underground Injection Control Well**

(Discuss the potential of utilizing a spray field or an Underground Injection Control Well for shallow or deep well disposal. Compare the feasibility and costs of such treatment techniques with the feasibility and costs of proposed treatment system.)

The potential for on-site disposal of wastewater was investigated. The construction of injection wells on-site was investigated as an alternative to the proposed discharges. The injection wells would be approximately 8" in diameter and approximately 300' in depth and would hold a volume of water of approximately 785 gallons per well. Thus, approximately 766 wells would be needed to ensure no discharge will occur. The estimated costs associated with the wells would be approximately \$20/linear foot, thus, 766 wells at 300' in depth would cost approximately \$4,596,000.

Abandoned underground mine works within the Elkhorn #3 coal bed are present within/adjacent to the proposed area and was evaluated as a possible site for disposal of runoff from the disturbed areas. The abandoned underground works are located above drainage, thus, a surface 'blowout' would be a threat to environmental and public safety. The abandoned works are up dip from populated areas thus increasing the risk of a sudden release of discharges from the old works creating the possibly of significant property damage and/or injury and loss of life.

#### **9 Discharge to other treatment systems**

(Discuss the availability of either public or private treatments systems with sufficient hydrologic capacity and sophistication to treat the wastewaters generated by this project. Compare the feasibility and costs of such options with the feasibility and costs of the proposed treatment system.)

In order to recycle the additional amount of generated wastewater to potable drinking water, the discharge would have to be transferred to the City of Whitesburg drinking water treatment facility located approximately 15.6 miles southwest of the proposed discharge location within the city of Whitesburg. Thus, the cost associated with the transfer of the discharges to the treatment facility would be \$5,518,656 (82,368 feet of 24" diameter HDPE pipe at \$67.00/linear foot) to run a 24" diameter HDPE pipe to the nearest treatment facility.

A possible alternative to piping water to the treatment facility would be the use of trucks to transport water. This alternative would pose additional costs of approximately \$2,200,000 (Nine 70,000 gallon tanks + labor +pipe system) in the construction of a system of pipes and collection tanks to collect and hold the water prior to loading tanker trucks. There would also be transportation costs of approximately \$3.25 per mile (fuel and service). If the total amount of water collected per month were 600,633 gallons (based on proposed pond volumes), it would need 301 round trips per month using a 2000-gallon truck. Thus, 301 trips at a distance of 31.2 miles at \$3.25/mile generates a cost of \$30,521/per month, \$3,662,568 total over the life of the project, plus the initial \$50,000 investment, plus the approximately \$100,000 cost to remove the system once the project is complete, plus the initial \$70,000 investment for the tanker truck, plus the annual salary for the tanker truck driver. This alternative would also result in additional impacts to the environment in the form of a loss of about 600,633 gallons of water per month to the local watershed. This may constitute material damage to the hydrologic balance within and outside of the permit area. In addition, implementing this alternative would result in increased risks to public safety because it would necessitate repeated daily trips by large tanker trucks on small rural roads.